

painting. The proportions are such as one sees in figures in certain stained-glass windows and in mediæval illuminations; observe the plane of the elbows and the strange disproportion in the entire arms. One can hardly imagine normal upper and lower arm bones fitting into the ill-drawn shapes into which I have sketched the bones. The radius and ulna of both arms, instead of being much shorter than the humerus, would, if inserted, be longer. If the left humerus of the figure is assumed to be correct in length as shown from A to B in my added black line, then the true length of the ulna should only reach from B to C, and not be half as long again as in the painting. On the other hand, if the length of the right ulna is considered correct as from D to E in my added black line, then the humerus would, in nature, reach from E to F—assuming the relative proportions of humerus and ulna to be 13 and 10½. It is quite within the bounds of possibility to name the painter of this strange figure.

The fold of the shroud is just over the top of the head, yet the painter was so incompetent to deceive that he made the two head-tops touch, like two hemispheres—as shown in the outline

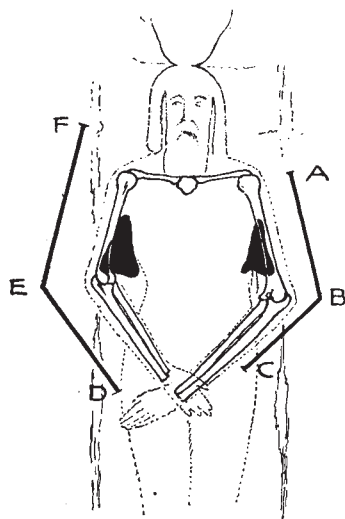


FIG. 1.—Reduced outline of figure on Holy Shroud with arm bones drawn in.

—whereas if the material had been folded over a head, a space of 6 inches would have been necessary for covering the neighbourhood of the junction of the coronal with the sagittal suture. As painted, the shroud appears to have been folded over a piece of flat pasteboard.

As for an artist—especially a mediæval one—being able to paint a picture in imitation of a negative, as suggested by Prof. Meldola, I have never heard of such a work, but if the painter of this picture had used an inferior white pigment as a body colour, as one of the compounds of carbonate or hydrate of lead, and heightened the light

places with this white colour, all the whites by this time would have become black or nearly so, and the positive of mediæval times would be a present-day negative.

When I repainted Sowerby's models of fungi in the British Museum, all Sowerby's whites had become a leaden-black. One sees the same result of time with inferior whites in old coloured prints.

The triangular black patches in the outline are damages upon the shroud.

Dunstable.

WORTHINGTON G. SMITH.

### The Theory of Laughter.

PROF. SULLY has given us in his latest work a model monograph on laughter.<sup>1</sup> With much charm and penetration, and in the light of a wide knowledge of the very extensive literature of the subject, he discusses the nature, causes and effects of laughter, its uses, its origin, its development and its future in the race and in the individual. He criticises the more important of the many theories of the ludicrous propounded by philosophers in all ages; he shows that each one of them fails to account for a considerable proportion of the many varieties of the ludicrous, and he concludes "that the impressions of the laughable cannot be reduced to one or two principles." While thus recognising the impossibility of bringing all kinds of laughter-causing things under one formula, Prof. Sully points to two causes of laughter which are closely allied and frequently cooperate, namely a sudden oncoming of gladness and a sudden release from constraint, and these, he regards as the two

principles most generally applicable to the explanation of the nature of the ludicrous. There is implied here and throughout the book the assumption that "the laugh . . . is in general an expression of a pleasurable state of feeling," an assumption which finds also explicit expression in several passages, *e.g.* "that outburst of gladness which we call laughter" and "laughter being primarily the expression of the fuller measure of the happy or gladsome state." It is assumed, in fact, that that which makes us laugh does so in general in virtue of its pleasing us, or, more shortly, that in general we laugh because we are pleased.

This assumption, which is implied in several of the older theories of the ludicrous, seems to be regarded as self-evident and in need of no justification, and yet it logically leads to some strange and startling conclusions. Thus we are led to infer that to a normal human being the sight of a man on crutches gladdens the eye (p. 89), that there exists a general tendency "to rejoice in the sight of what is degraded, base or contemptible" (p. 89), that very laughable and therefore, according to this theory, very pleasing things are exhibitions of vanity, hypocrisy, lying and deceit. Prof. Sully makes out the following list of twelve classes of laughable things, *i.e.* things the spectacle of which provokes laughter:—(1) Novelties, (2) physical deformities, (3) moral deformities and vices, (4) disorderliness, (5) small misfortunes, (6) indecencies, (7) pretences, (8) want of knowledge and skill, (9) the incongruous and absurd, (10) word-plays, (11) that which is the expression of a merry mood, (12) the outwitting or getting the better of a person. We may perhaps strike out from this list the eleventh class, because it cannot properly be said that we laugh *at* that which is the expression of a merry mood; we should rather say that it excites our laughter through the force of sympathy and imitation. And we may perhaps emend the definition of the twelfth class and say that what we laugh *at* is the spectacle of the man being outwitted or got the better of. Laughable things, then, fall into eleven classes, each one of which is for most men highly displeasing when the specific character of the class is strongly marked, but provokes laughter in most of us, when in certain moods, if its specific character is but slightly marked, though to many men (the age-lasts) the spectacle of any one of these things (with the possible exception of those of the first class) is at all times and in all degrees displeasing. And, in fact, well-nigh every instance of the ludicrous mentioned in the book is essentially displeasing in character, and even the laughter of the refined individual laugher, the humorist, is said to be fed on "the spectacle of folly, of make-believe and of self-inflation." Surely an unpleasing diet! It is significant, too, that laughter is not infrequently provoked by the sudden announcement of a death or by the description of some extremely horrible experience or series of events, as also by a severe blow on the shin, on the "funny-bone" or on other parts of the body, and by situations that excite an unpleasant state of "nerves" or "needle."

If, then, we rid ourselves of the assumption that laughter is the expression of pleasure, we shall admit that, while on the one hand the noble, the beautiful, the harmonious, the orderly and the sublime are pleasing but not laughable, on the other hand the mean, the ugly, the incongruous, the riotous and the ridiculous are displeasing, although in certain circumstances they may provoke laughter; we shall admit, in short, that the laughable or the ludicrous is essentially displeasing, apart from the laughter that it may provoke. We may put alongside this conclusion two other indisputable facts of great significance; firstly, the fact that laughter, if not excessive, produces beneficial physiological effects of an exhilarating nature, it produces "accelerated circulation and more complete oxygenation of the blood" and "a considerable increase of vital activity by way of heightened nervous stimulation"; secondly, the fact that laughter causes "a dispersion of the energies which for the maintenance of the attention ought to be concentrated. We are never less attentive during our waking life than at the moment of laughter."

We have, then, these three facts:—(1) The things we laugh at are in themselves displeasing, (2) laughter disperses our attention, (3) laughter produces a general increase of the vital activities. When thus brought together, these facts irresistibly suggest that we, being but imperfectly adapted to the world in which we live and therefore necessarily surrounded by the depressing spectacle of suffering, of disorder and of incongruities, and *sympathy* being inwrought in the very bases of our constitution, have been endowed by beneficent Nature with the

<sup>1</sup> "An Essay on Laughter." James Sully, M.A., LL.D. Pp. xvi+441. (London: Longmans, Green and Co., 1902.) Price 12s. 6d. net.

